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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,431	02/12/2001	Hideki Sunaga	040679/1207	8145

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EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 01/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/780,431

Applicant(s)

SUNAGA ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8-12 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it contains the word "comprises" in line 1 and more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. in view of Penketh.

Regarding claim 1, Yamaguchi et al. show a brushless motor (Figure 1) comprising:

- A circuit protecting case (17);
- A holder (3) disposed on said case;
- A motor shaft (9) rotatably held by said holder;
- A stator (2) disposed about said holder, said stator including a plurality of coils (5) which surround said motor shaft;
- A yoke (7) fixed to said motor shaft to rotate therewith, said yoke covering said stator with a given space therebetween;

Art Unit: 2834

- Permanent magnets (8) held by said yoke;
- A circuit substrate (12) tightly held in said circuit protecting case; and
- A drive circuit (coil 14, Hall sensor 16, transistor 12, etc.) arranged on said circuit substrate (also see column 3, lines 1-10).

Yamaguchi et al. do not show the drive circuit including a switching section which switches the path of current directed to said coils of the stator and a control section which controls a switching timing of said switching section, said switching section including a plurality of switching elements which generate a certain heat when operated; and a partition wall provided in said circuit protection case to partition the interior of said case into a first chamber to which the switching elements of said switching section are exposed and a second chamber to which said control section is exposed. It is noted that Yamaguchi et al. also show the first (18) and second chambers (18a) with switching elements (32) generating heat.

Penketh shows the drive circuit (20, Figure 4) including a switching section (motor drive circuitry, column 4, lines 44-54) which switches the path of current directed to said coils of the stator and a control section (motor control circuitry, column 4, lines 48-50) which controls a switching timing of said switching section, said switching section including a plurality of switching elements (26) which generate a certain heat when operated; and a partition wall (21) provided in said circuit protection case to partition the interior of said case into a first chamber (22) to which the switching elements of said switching section are exposed and a second chamber (23) to which said control section is exposed for the purpose of reducing electromagnetic interference.

Since Yamaguchi et al. and Penketh are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the drive circuit with two sections and place each section in a separate chamber as taught by Penketh for the purpose discussed above.

Regarding claim 2, it is noted that Yamaguchi et al. also show said partition wall (34a, 34b) being integral with and extending from a part of said case 17) into the interior of the same, and in which said circuit substrate (12) extends through said partition wall.

Regarding claim 3, it is noted that Yamaguchi et al. also show said circuit protection case (17) being formed with a first ventilation opening (27) through which said first chamber (18) is communicated with the outside of said case (column 3, lines 54-56).

Regarding claim 4, it is noted that Yamaguchi et al. also show said circuit protection case being further formed with a second ventilation opening (23) through which said second chamber (18b) is communicated with the outside of said case (column 4, lines 18-20), and in which said partition wall is formed with a slit (between 34a and 34b) through which said first and second chambers are communicated.

Regarding claim 5, it is noted that Yamaguchi et al. also show said switching elements (32) being attached to a heat sink (33) held by said case, said heat sink having a plurality of heat radiation fins which are exposed to the outside of said case (Figure 1).

Art Unit: 2834

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. in view of Penketh as applied to claim 5 above, and further in view of Horiuchi et al.

Regarding claim 6, the brushless motor of Yamaguchi et al. modified by Penketh includes all of the limitations of the claimed invention except for said switching elements being pressed against said heat sink by means of a spring member.

Horiuchi et al. show the switching elements (55, Figure 3) being pressed against said heat sink (56B) by means of a spring member (58) for the purpose of reducing cost.

Since Yamaguchi et al., Penketh and Horiuchi et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to press switching elements against the heat sink by means of a spring member as taught by Horiuchi et al. for the purpose discussed above.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi et al. in view of Penketh and Horiuchi et al. as applied to claim 6 above, and further in view of Kramer et al.

Regarding claim 7, the brushless motor of Yamaguchi et al. modified by Penketh and Horiuchi et al. includes all of the limitations of the claimed invention except for an

inner surface of said circuit protection case being lined with a noise shielding plate of metal.

Kramer et al. show an inner surface of the housing being lined with a noise shielding plate of metal for the purpose of reducing electromagnetic interference.

Since Yamaguchi et al., Penketh, Horiuchi et al. and Kramer et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to line an inner surface of the circuit protection case with a noise shielding plate of metal as taught by Kramer et al. for the purpose discussed above.

Allowable Subject Matter

6. Claims 8-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the record of prior art does not show a brushless motor comprising terminal pins extending from the coils of the stator and connecting bus bars held by an inner case installed in the circuit protection case, each connecting bus bar having one end welded to a given part of the control section of the drive circuit and the other end welded to corresponding one of the terminal pins.

Information on How to Contact USPTO

Art Unit: 2834

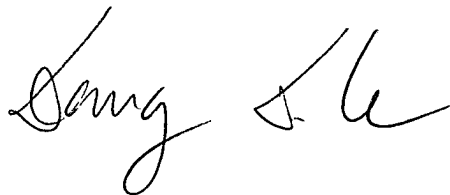
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
January 25, 2002

DL

A handwritten signature in black ink, appearing to read "Dang D Le". The signature is written in a cursive, flowing style with a large initial "D" and a stylized "L".